

them is real, and sometimes leads to an intimate union of their substance by mutual penetration. To this, considered as an objection to his theory of veins, Werner makes the following reply.

“ The union between a vein and a rock, on some occasions, is so intimate as to give the appearance of their having been *melted together*, if I may so express myself.”
“ In places where this peculiarity occurs, the rock has had a strong attraction for the substance of the vein introduced into the rent, and has become so intimately mixed with it, that they now appear to be one and the same substance ; at least, it is not easy to mark a line of separation between the rock and the vein. This is particularly the case with veins of quartz and hornblende, when they occur in newer gneiss of a quartz nature ; but veins of pyrites in this rock do not present this appearance, which is, *upon the whole, a rare occurrence*. In general, the vein and rock are very distinctly *separated from each other* ; and there are sometimes interspersed between them thin layers of an earthy matter called *besteg*. A vein is very seldom united to the rock so as to adhere intimately with it through its whole course ; but this only takes place in certain parts.”
(*Werner on Veins*, p. 90.)

To this it seems only necessary to add, that in whatever manner the ingredients of mineral veins were placed in their present situations, it is not possible to doubt that the specific relations alluded to must have been manifested. Were all the mineral masses injected by fusion, as Hutton thought, there would be segregations, and peculiar arrangements, produced by the conditions of cooling, the conducting power of the rocks, and their inherent molecular forces. Were they introduced by solution, as Werner believed, what menstruum capable of dissolving such a heterogeneous mixture could be without power on the walls of the fissure, or some part of them ? Were the elementary parts of the substance of veins raised by sublimation, molecular attractions would be exerted unequally by the different parts of the